UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,308	01/27/2004	Kas Kasravi	14012-140001/50-02-032	1219

26230   7590   08/20/2008
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EXAMINER
SAINT CYR, LEONARD

ART UNIT	PAPER NUMBER
2626	

MAIL DATE	DELIVERY MODE
08/20/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/766,308	KASRAVI ET AL.
Office Action Summary	Examiner	Art Unit	
	LEONARD SAINT CYR	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _15 May 2008_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1, 2, 3, 6, 7, 10 - 14, 16 -21, 23, 24,26 - 31, and 33 - 40_ is/are pending in the application.

  4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _33-35_ is/are allowed.

6)☒ Claim(s) _1, 2, 3, 6, 7, 10 - 14, 16 - 21, 23, 24, 26 - 31, 36 - 40_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

  a)☐ All b)☐ Some * c)☐ None of:

  1.☐ Certified copies of the priority documents have been received.

  2.☐ Certified copies of the priority documents have been received in Application No. _____.

  3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)   **Office Action Summary**   Part of Paper No./Mail Date 20080805

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 05/15/08, regarding claims 1, 2, 3, 6, 7, 10 - 14, 16 –

21, 23, 24, and 26 – 31, and 36 - 40 have been fully considered but they are not

persuasive.

Applicant argues that Gillis does not teach a weighting factor relating to an

importance of at least part of term group that includes a main term and at least one

subordinate term semantically related to the main term (Amendment, page 16).

The examiner disagrees, Gillis teaches "a small subset of terms (or groups of

terms such as phrases) is chosen from the source domain. Selected terms within a

multitrem query may be weighted, if desired, to reflect their importance to the user"

(col.10, lines 19 – 22; col.42, line 67- col.43, line 1). Weighting selected groups of

terms, such as phrases, that reflect their importance implies weighting factor is related

to the importance of the terms.

Applicant argues that Gillis does not teach a frequency value relating to a

number of occurrences of the term group (Amendment, page 6).

The examiner disagrees, Gillis teaches that " Vector of terms that occurred less

frequently in the training corpus are weighted more heavily in the calculation of

summary vectors of search domain records" (col.41, lines 43 - 47). Weighted more

heavily terms occurring less frequently in the training corpus implies a frequency value

relating to a number of occurrences of the term group.

Applicant argues that Gillis does not teach a metric that measures the semantic

distance between two semantic vectors as a function of the weighting factors

(Amendment, page 17).

The examiner disagrees, Gillis teaches that "Vector of terms that occurred less

frequently in the training corpus are weighted more heavily in the calculation of

summary vectors of search domain records. The semantic distance between two

domains then can be represented quantitatively by the simple Euclidean distance

between the positions of the corresponding centroid vectors in the high dimensionality

semantic space" (col.56, lines 31 – 34). Determining the semantic distance between

two domains by using the positions of the corresponding centroid vectors in the high

dimensionality semantic space implies a metric that measures the semantic distance

between two semantic vectors as a function of the weighting factors, since weighted

vector of terms are used in the calculation of summary vectors of search domain

records.

Claim Rejections - 35 USC § 102

2.   The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

3.   Claims 1, 2, 3, 6, 7, 10 - 14, 16 – 21, 23, 24, 26 – 31, and 36 – 40 are rejected

under 35 U.S.C. 102(a) as being anticipated by Gillis (US Patent 6,523,026).

As per claims 1, Gillis teaches comparing semantic content of two or more

documents, comprising:

accessing two or more documents ("source and target domains"); performing a

linguistic analysis on each document ("computing a set of vectors"; col.10, lines 9 – 17);

col.11, lines 36 – 40);

defining a semantic vector for each document based on the linguistic analysis,

said semantic vector having multiple components, wherein each component of said

semantic vector has at least: a term included in the document or a synonym of said

term; a weighting factor relating to an importance of said term ("Selected terms within a

multitrem query may be weighted, if desired, to reflect their importance to the user");

and a frequency value relating to a number of occurrences of said term ("computing a

set of term vectors"; col.11, lines 36, and 37; col.10, lines 18 – 20; col.42, line 67-

col.43, line 1).

As per claim 2, Gillis further discloses that the linguistic analysis comprises

sentence analysis ("sentence in the individual documents"; col.43, lines 43 – 46).

As per claim 3, Gillis further discloses that the sentence analysis comprises a syntactic analysis ("preferred stop list word include in the vectorization") and a semantic analysis ("semantic similarity"; col.39, lines 14 – 20; col.35, lines 4 – 6).

As per claim 6, Gillis further discloses that each component of the semantic vector for at least one of the documents comprises multiple dimensions ("n dimensional space"; col.39, line 63 –col.40, line 1).

As per claim 7, Gillis further discloses that each component of the semantic vector for at least one of the documents further comprises a subordinate concept value ("cable" is the subordinate concept of term "telecommunications"; col.51, lines 30 – 35).

As per claim 10, Gillis further discloses that some of the components of the semantic vector have for at least one of the documents {main term – subordinate term pairs} as their first value ("cable" and "telecommunications" are related term pairs, wherein cable is the subordinate term of telecommunications; col.51, lines 30 – 35).

As per claim 11, Gillis further discloses that the semantic vector comprises a multi-dimensional vector defined by the content of a semantic net ("n dimensional semantic space"; col.39, line 63 – col.40, line 1).

As per claim 12, Gillis further discloses that the content of the semantic net is augmented by relative weights, strengths, or frequencies of occurrence of the features within the semantic net ("frequency related weightings to term in the computation of summary vectors"; col.41, lines 40 - 46).

As per claim 14, 23, 24, 26, and 27, Gillis teaches comparing two or more documents, by:

linguistically analyzing two or more documents to identify at least one term group in each document, each tem group comprising a main term and at least one subordinate term semantically related to the main term ("a small subset of terms (or groups of terms such as phrases) is chosen from the source domain…computing a set of vectors"; col.10, lines 9 – 22); col.11, lines 36 – 40);

generating a semantic vector associated with each document, the semantic vector comprising a plurality of components, each component including; a term group in the document; a frequency value relating to a number of occurrences of the term group; and a weighting factor relating to an importance of at least part of the term group ("computing a set of term vectors… Vector of terms that occurred less frequently in the training corpus are weighted more heavily in the calculation of summary vectors of search domain records"; col.11, lines 36, and 37; col.10, lines 18 – 20; col.42, line 67- col.43, line 1; col.41, lines 43 - 47); and

comparing the semantic vectors using a defined metric ("summary vectors to be compared"; col.39, line 19, and 20; col.42, lines 2, and 3);

wherein said metric measures the semantic distance between two documents as a function of at least the frequency values included in the semantic vectors for the two documents ("semantically distant are individually represented at least 50 times"; col.48, lines 48 – 55; col.51, lines 30 – 35; col.41, lines 43 - 47).

As per claim 16, Gillis further discloses that the main term includes synonyms of the main term (col.11, line 8).

As per claims 17, 28, Gillis further discloses that one or more of said two or more documents are located using an autonomous software or 'bot program ("software programs"; col.10, lines 9 – 17; col.25, lines 57 – 67).

As per claims 18, and 29, Gillis further discloses automatically analyzes each document in a defined domain (source and target domains) or network by executing a series of rules and assigning an overall score to the document ("average of component values"; col.10, lines 9 – 17; col.41, line 66 –col.42, line 25).

As per claim 19, Gillis further discloses that all documents with a score above a defined threshold are linguistically analyzed ("generate term vectors and accept only records that match all the categories beyond some minimum threshold"; col.46, line 65 – col.47, line 11).

As per claims 20, and 30, Gillis further discloses that the semantic vector is a quantification of the semantic content of each document ("semantic vectors"; col.39, lines 14 – 20; col.1, lines 15 - 20).

As per claim 21, Gillis further discloses that each component has multiple dimensions ("n dimensional semantic space"; col.39, line 63 – col.40, line 1).

As per claim 31, Gillis further discloses that the output of said defined algorithm is a measure of at least one of semantic distance, semantic similarity, semantic dissimilarity, degree of patentable novelty and degree of anticipation ("semantic similarity"; col.4, lines 1 – 3).

As per claim 36, Gillis further discloses that said term comprises at least one of a word or a phrase ("a small subset of terms (or groups of terms such as phrases) is chosen from the source domain"; col.10, lines 19 – 22).

As per claim 37, Gillis further discloses that comparing the semantic vectors based on a defined algorithm (col.42, line 2).

As per claim 13, Gillis further discloses that the output of said defined algorithm is a measure of at least one of semantic distance, semantic similarity, semantic

dissimilarity, degree of patentable novelty and degree of anticipation ("semantic

similarity"; col.4, lines 1 – 3).

As per claim 38, Gillis further discloses that the at least one subordinate term

includes synonyms of one of the subordinate terms (col.11, line 8).

As per claim 39, Gillis further discloses that one or more of the at least one

subordinate term or the main term comprises a phrase (col.10, lines 19 – 22).

As per claim 40, Gillis further discloses that the weighting factor comprises a

plurality of different weighting factors and each of the different weighting factors relates

to the importance of the main term or a subordinate term in the term group ("Vector of

terms that occurred less frequently in the training corpus are weighted more heavily in

the calculation of summary vectors of search domain records"; col.41, lines 43 - 47).

Allowable Subject Matter

4.   Claims 33 – 35 are allowed over the prior art. The following is an examiner's

statement of reasons for allowance:

As to claim 33 – 35, Gillis does not teach or suggest that the defined metric is

one of: Sqrt (f 1 2 + f 2 2 + f 3 2 + f 4 2 + + f (N - 1) 2 f N 2) n * 100 ,wherein f is a

difference in frequency of a common term between two documents and n is the number

of terms those documents have in common; or Sqrt(sum((w-Delta)A2*w-

Avg))/(Log(n)A3*1000), wherein w-Delta is the difference in weight between two

common terms, w-Avg is the average weight between two common terms, and n is the

number of common terms, between two documents.

Conclusion

5.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to LEONARD SAINT CYR whose telephone number is

(571) 272-4247. The examiner can normally be reached on Mon- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone

number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LS
08/06/08
/Michael N. Opsasnick/
Primary Examiner, Art Unit 2626